

DOCUMENT RESUME

ED 344 992

CE 060 989

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TITLE What's New in the News? Comprehension of the News among Adults with Limited Formal Education.
INSTITUTION Hebrew Univ. of Jerusalem (Israel). Martin Buber Inst. for Adult Education.
PUB DATE 90
NOTE 44p.; Published for International Literacy Year 1990.
AVAILABLE FROM Martin Buber Institute for Adult Education, Hebrew University, Mt. Scopus, Jerusalem 91905, Israel (\$7; quantity price \$5).
PUB TYPE Reports - Research/Technical (143)
EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS Adult Basic Education; Adult Learning; *Adult Literacy; Content Area Reading; *Decoding (Reading); Educational Background; Foreign Countries; *Literacy Education; Newspapers; *News Writing; Reader Response; Reader Text Relationship; *Reading Comprehension; Reading Processes
IDENTIFIERS Israel

ABSTRACT

An Israeli study determined what happens when persons with low-literacy levels read news accounts that presuppose general knowledge that the writer expects them to have, but that they may not necessarily possess. The study sample consisted of about 600 students, mostly women, in 30 literacy centers throughout the country. In each class, adult students were given a sample news article from an easy Hebrew weekly and asked to explain it. Students' explanations were written down verbatim. In addition, 2 students in each of the 30 classes studied were interviewed in 1-2 hour interviews; they read news articles on politics, economics, and human interest, and their explanations were recorded. The most important findings of the study were as follows: (1) when the readers do not understand, they interpret; and (2) the decoding process in instances of noncomprehension occurs according to a system, on both macro and micro levels. The study's contribution to reading comprehension theory lies in its highlighting of the pragmatic aspect of comprehension and in its development of a method for examining the pragmatic element by identifying, listing, and comparing the propositions of the news discourse and the reader's reconstruction of it. The study shows that prior knowledge must not be assumed and that writers should be aware of the "missing link" between their words and their readers' comprehension. (81 references) (KC)

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ED344992

WHAT'S NEW IN THE NEWS?

Comprehension of the News Among Adults With Limited Formal Education

Dr. Ora Grebelsky

International Literacy Year

1990

United Nations Persian Gulf
Inflation Tiananmen Square
Coalition Gorbachev Budapest
Opposition South Korea Democracy
Bush Cost of living index
Mitterand

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Adults With Limited Formal Education**

by

Dr. Ora Grebelsky

Published for

International Literacy Year
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The Martin Buber Institute for Adult Education
of The Hebrew University of Jerusalem, Israel

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Layout by Judith Fattal

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The Study's Objectives and Theoretical Basis

*"It's hard! You study and you study and it's hard.
We have no roots — that's the problem."*

(Tehila student)

The primary aim of those who write the news is to supply their target audience with new information. The central feature of the information presented by the media is its newness. Thus the word "news" became the noun through which the content of this information is described.

The question this study poses — what is new in the news in the world of adults with limited formal education (LFE adults) — is intended to indicate that what is new for the addresser who writes and edits the news is not always what is absorbed by the addressee. The encoding and decoding codes are not necessarily symmetrical. One reason for this asymmetry is that the addresser who formulates the news assumes certain prior knowledge on the part of the addressee, and these assumptions are not always realized.

The addresser expects the addressee to be equipped with the following:

The present publication is an abstract of a doctoral dissertation which was supervised by Prof. Robert Cooper and submitted to the Senate of the Hebrew University for the Doctor of Philosophy degree.

- (a) The general knowledge needed to understand the news. When addressers mention Rome, they expect the addressee to know that it is the capital of Italy. When they write that the cost-of-living index has risen by 0.9 percent, they assume that the addressee knows what the index is, what percent means, and what the numerals 0.9 signify.
- (b) The various schemata associated with the news. For example, the addresser assumes the reader, listener or viewer is familiar with the schema of relations between East and West.
- (c) The current knowledge relevant to the news. When the news writer mentions Pollard, the American convicted of spying for Israel, he assumes the reader has been following the news and knows who Pollard is.

When these presumptions of prior knowledge are not realized, it is reasonable to assume that communication between the producer of the news item and the decoder will be short-circuited.

The present study seeks to explore the issue of what happens when the addresser's assumptions of prior knowledge on the part of the addressee are not realized. In such instances, how does information processing take place? What are the results?

The study focuses on a population of LFE adults for whom these questions are particularly pertinent.

Who exactly is an LFE adult? Defining the concept is problematic because learning is a lifelong process occurring along an open-ended continuum between ignorance and ever-expanding knowledge. Even complete illiterates acquire knowledge in various areas. Conversely, educated persons may encounter a text whose writer assumed prior knowledge they lack.

Scholars dealing with the problems of LFE adults have adopted three approaches toward defining the minimum body of knowledge which these adults should be taught:

-
- (a) **Knowledge required for everyday needs** (Laubach, 1970; Harris, 1975). The need to offer the knowledge required for daily life is unquestioned, but beyond certain widely accepted conventions, just what this knowledge comprises remains undefined. Today's everyday needs are numerous and diverse. This approach, then, points to a general direction but offers no clear criteria and lacks focus.
- (b) **Knowledge equivalent to that acquired in a given number of years of elementary school.** In the 1950s, fourth- or fifth-grade equivalency was considered the minimum; in the 1960s the criterion was eighth-grade equivalency; and today knowledge on a tenth- to twelfth-grade level is regarded as minimal. Easily quantified and more objective than the other criteria, this approach is favored by statisticians.
-

According to the 1988 Israel Statistical Yearbook, one fourth of the Jewish population — 561,200 persons — lack elementary education.

Low formal education in Israel stems from three sources:

- a) **Mass immigration from developing countries where formal education was limited to a privileged elite and largely closed to women;**
- b) **The inevitable educational problems that followed the establishment of the State of Israel — inadequate immigrant housing, inadequate schools, insufficiently trained teachers — which left a residue of ignorance. In addition, some of the present schools have failed to achieve what had been expected in teaching disadvantaged pupils.**
- c) **Survivors of the Nazi Holocaust who were denied regular schooling by the cataclysm they lived through, and who came to Israel too late in life to be integrated into the school system.**

Israel passed a law stipulating compulsory education for children in 1949, but LFE adults were viewed as the transitional "wilderness generation." The *ulpanim* (intensive Hebrew language courses) were designed for the educated. The state assisted LFE adults with their pressing economic and social problems, but this group had no opportunity to learn. An education gap between various parts of the population developed.

This growing education gap gave rise to ad hoc solutions in the form of various "projects": a Hebrew-language and basic education project in 1954 and a project to eradicate illiteracy in 1959. These efforts, conducted in large part by enthusiastic volunteers, did bring a certain improvement, but their achievements did not last.

According to Order #37.0102 issued by the Israel Defense Forces Chief of Staff, **"a soldier in the regular army who has not finished elementary school must complete his education during his period of military service, according to the basic education program which, after examination, will grant him a recognized diploma."**

IDF Basic Education School

In 1963, the Israel Defense Forces (IDF) Education Branch established its own basic education school, where soldiers study during the last three months of their compulsory military service. The IDF has prepared curricula in geography, history, Bible, civics, science, and mathematics; it has published appropriate textbooks and trained women soldiers as teachers. The soldier-students study in small classes in the mornings; afternoons are devoted to individual tutoring, which includes newspaper reading. The curriculum includes discussion of current events. Starting in 1981, part of this study program was moved to the beginning of the compulsory service period. The work and study in which the soldiers engage after their military service indicate that they have made significant progress in the education program; a comprehensive study of this progress has yet to be conducted.

Women Soldiers Project

One serious effort to remedy the growing social and educational gap was the women soldiers project of 1964. The Minister of Education at that time, Zalman Aran, asked his staff to draw up a map that would indicate the various educational levels of Israel's adult population. He termed the result "the map of horror": certain parts of the country were revealed as concentrations of ignorance of up to 50 percent, and there was a correlation between educational level and

ethnic differences. It was decided that a massive educational effort was called for.

Yitzhak Navon, who was to become Israel's fifth president, was at that time head of the Education Ministry's Culture Department. In conjunction with the IDF, Navon initiated an original education project in which women soldiers volunteered to teach LFE adults. Living in development towns and educationally-problematic villages, the women soldiers had the job of convincing the local population of the need to learn, and teaching those interested wherever and whenever they chose.

Under this program, the Education Ministry published material for teaching literacy and a special newspaper for LFE adults, "Gateway for the New Reader." The women soldiers project made significant progress during the first years of its operation, but its achievements gradually waned: beyond the most elementary levels, the frequent turnover of the soldier-teachers and one-to-one teaching method proved inefficient in the long run. After working in various towns for 12 years, soldier-teachers now work with the Tehila adult education program as teaching assistants.

Tehila (the Hebrew acronym for "elementary education program for the adult learner") was established in 1977 by the Education Ministry Adult Education Division (Zivion, 1987) and operates with significant effect to this day. One of Tehila's chief advantages is its operation not as a short-lived special project but through established study centers in all parts of the country. Today, some 20,000 students (mostly women) learn in 80 Tehila centers. Most learning takes place during the morning, with each student attending four or five hours of classes once or twice a week. Students are placed, according to their previous knowledge, in one of four learning levels. Tehila graduates who wish to continue studying can do so in the Tehila secondary education program. Study materials were prepared for each learning level and appropriate textbooks were written: *A Page and Another Page* and *Reading for a Reason* for the first two levels (Laufert, 1987), and texts in literature, history, geography, civics, and mathematics for the higher levels. Each Tehila center is a learning community, with a variety of social activities and others designed to widen the students' horizons (Tokatli, 1982).

Tehila's singularity lies in its systematic approach, specifically designed for LFE adults. Tehila has won significant achievements:

Tehila Project

students who were completely illiterate now read and write; LFE adults have expanded their knowledge and climbed the Tehila program ladder. This program has yet to be studied in depth; the present study represents a step in that direction, in the hope that it will foster the progress of LFE adults.

In *Illiterate America* (1985) Kozol wrote that thirty percent of the population of the United States — according to official statistics, no less than twenty-five million persons (Harman, 1983) — are functional illiterates.

Islands of illiteracy have also been uncovered in Europe, among native as well as immigrant populations. The problem is particularly severe in the third world — Africa, South America, and many Asian countries — where the number of illiterates reaches one billion.

A study dealing with the problems of LFE adults can thus be relevant not only for many in Israel but also throughout the world.

(c) **Functional literacy.** According to Gray's (1956) definition, "A person is functionally literate when he has acquired the knowledge and skills in reading and writing which enable him to engage effectively in all those activities in which literacy is normally assumed in his culture or group." Flexible and particular to time, place, and social and cultural context, this definition has been adopted by many.

In order to foster the literacy of the individual and of society, we must define the uses and functions of literacy (Heath, 1980). Scribner and Cole (1978, 1981), following their study of the Vai tribe, also stressed the importance of the functions required by the learner. They speak of "literacy without schooling," literacy which focuses on the functions actually needed in day-to-day life.

The IDF placement examinations adopted this functional approach (Nir, Spolsky, Cooper). Twenty-five functional goals were defined: from the ability to read labels, signs, and standard army questionnaires to recognition of various parts of the newspaper and comprehension of classified ads. The goals were grouped according to level of difficulty and the examination was constructed according to these levels. The examination is not taken with a pencil and paper. Rather,

the tester, holding a copy of the exam, questions each testee individually and determines his level of comprehension.

An interesting attempt to develop the functional approach was conducted in the United States. This study, the Adult Performance Level (APL), was designed to identify the tasks required of an adult currently living in the U.S. and define the knowledge needed to perform them. The findings, published in a report presented by the University of Texas in 1975, identified 65 such tasks. These were divided into six categories of general knowledge, with each category graded according to three levels of functional ability.

Miller (1988) notes that in 1985 the National Assessment of Educational Progress (NAEP) drew up a functional evaluation scale for examining the literacy ability of a sample of adults aged 21 to 25 (Kirsh, Jungeblat, 1986). Using the theory of response to items of knowledge, the NAEP constructed three scales (in general expression, work-related documents, and use of arithmetic) progressing from 0 to 500. Functions in various areas were placed on the scale at the point where the performance level was attained by 80 percent of those who responded to them correctly. It was suggested that this scale be translated into a parallel one approximating levels of learning: 150 would indicate the first reading level; 200, the third level; 250, the seventh level; 300, the twelfth level (completion of high school); and 350, college level.

Examples of functioning at a certain level will illustrate: On the verbal expression scale, 96 percent placed at the 200 level (writing a description of a job they would like); 72 percent were at the 275 level (writing a letter); 37 percent were able to write a summary of a newspaper article.

On the documents scale, 99.7 percent were above level 150 (knowledge of the expiration date of their driver's licenses), 57 percent were at level 300 (use of a map to find a certain address), 20 percent were above level 350 (using a timetable to determine how long someone who missed a bus at a certain hour would have to wait).

On the quantitative scale, 92 percent were at level 225 (ability to add two numbers in their bank statement), and 38 percent placed at level 325 (ability to compute the cost of a meal according to a menu).

In the Adult Literacy and Basic Skills Unit (ALBSU), a project conducted in England, volunteers teach LFE adults individually, with the adult learner determining the curriculum. As noted, this approach proved itself for the first learning stages, which dealt with basic skills. At a later stage, it was asked whether the adult learners themselves had enough perspective to determine their own needs. The assumption that emerged was that the learner's desires should be only one of the criteria for determining the curriculum.

Freire (1972, 1973, 1985, 1987) advocated functional literacy designed to change the learner's individual and social reality and rejected mechanistic approaches toward the process of learning to read and write in adulthood. He recommended instead a true dialogue between teachers and students, one which would focus on codified representations of existential situations in the learner's lives. Leading far beyond the acquisition of reading and writing skills, such a dialogue would promote an awareness of the human right and ability to change reality. Learning to read and write is thus much more than the ability to decode written symbols representing a phonetic system, and is a true act of knowledge acquisition, in the full sense of the word. Teaching reading and writing is not a trivial matter of decoding "sat, mat, cat, rat," of drilling an unfamiliar word, but rather the profound learning of "calling the world by name."

The situational approach to functional literacy (Harman, 1987) seeks to deal with the problem of defining functional needs by examination of specific communities, without attempting to determine a general, all-inclusive policy. Functional literacy is viewed in a situational context, by examining, for example, a Mexican immigrant community of LFE adults (limited in their native Spanish as well as English) living in Miami, Florida, and determining what they need to function effectively in American society. The resulting learning program would be adapted to their specific situation and dynamically suited to their needs.

The relatively new situational approach (a type of functional approach geared to specific situations) addresses certain of the difficulties involved in the attempt to provide a uniform formula for differing situations. But this approach does not conclusively define the functional needs of LFE adults. Is the ability to find a job sufficient? Are there further needs?

Hirsh (1988) offers a different approach, which he calls "cultural literacy": the acquisition of the basic information common to members of a certain culture. According to Hirsh, recent years have seen an exaggerated emphasis on *how* to learn, at the expense of determining *what* to learn.

In the context of adult education, Hirsh, in cooperation with specialists in various fields of knowledge, compiled a preliminary list of concepts, personalities, places, and other items as a basis for cultural literacy. Everyone living in the United States should know, for example, what democracy is, who Lenin was, where the Atlantic Ocean is located, and what happened between 1914 and 1918.

In his book *Cultural Literacy: What Every American Needs to Know*, Hirsh offers an alphabetical list of 5,000 names, phrases, dates, and concepts. Items listed under the letter "Z", for example, include Zeus, Zero, Zen, Zeitgeist, Zapata, Zambia, Zurich, Zoning, Zola Emile, Zionism, Zimbabwe. Over one hundred consultants read the list and approved approximately 90 percent of the items, which are intended as a base and open to continual additions and subtractions. According to Hirsh, the list contains those items needed for effective basic functioning (neither too "low" nor too "high") in contemporary American society.

Hirsh maintains that, just as we pay no attention to the air we breathe but cannot survive without it, "world-knowledge" is the "air" that is vital for reading with comprehension. Some of this knowledge is universal and needed by anyone living in a modern society; some belongs to a particular culture. Cultural literacy, then, is the basis for communication among members of the same culture.

The Distinctiveness of the Present Study

The three approaches outlined above all posit external criteria — analysis of the needs of the individual and of society, or selection and analysis of various types of content — for determining what is needed to foster the progress of LFE adults.

The distinctiveness of the present study is in its attempt to understand how the LFE adult processes information during his progression along the illiteracy-literacy continuum: what happens in the interaction between the LFE adult and the text, when implicit in the text are assumptions of prior knowledge which the reader does not possess.

For purposes of the study, texts were chosen in the area of news, a sphere regarded by each of the three approaches described as essential to the LFE adult's progress. To function in today's society, the citizen (especially in Israel) must keep abreast of events in politics, economics, and everyday life.

World-Knowledge in Discourse Analysis

The ability to read a news item fluently does not ensure comprehension. Nir and Blum-Kulka (Hebrew, 1981) identify three components essential to reading comprehension: the **lexical**, the **textual**, and the **pragmatic** (world-knowledge). The pragmatic element is dependent on the reader's educational level and orientation in world affairs. Lack of knowledge will impede comprehension.

The present study examines the pragmatic component in discourse analysis.

According to Nir and Blum-Kulka (*ibid.*), "Implicit in every text are prior assumptions of the world-knowledge the readers bring with them." This is particularly true of news discourse. For the present study, we examined the amount of knowledge needed to understand the news sections of an easy Hebrew newspaper and discovered that the reader must be familiar with scores of names of people and places and dozens of concepts in civics, economics, mathematics, and history. The reader needs a long list of facts about current affairs, as well as cognitive schemata (such as a schema of elections when local elections are being held).

Cognitive schemata are the "building blocks of cognition" (Rumelhart, 1977). These schemata serve both to store existing units of knowledge and to identify and classify new knowledge for purposes of comprehension and absorption. "Schematic deficiency" or "schematic incongruence" will impede the absorption of new knowledge.

The problem of the absence of the schemata and world-knowledge needed to understand discourse is not limited to reading comprehension. When unrealized assumptions of prior knowledge are implicit in the discourse, the same problem exists for radio or television news which, like the written discourse, assumes comprehensive knowledge (illustrated in the study) without which the news will not be understood.

The advent of television raised high hopes for the advancement of LFE adults. It was anticipated that the possibility of filming persons, places, and events and bringing them into the viewer's home would significantly expand the public's body of knowledge, and especially that of LFE adults. Many studies (summarized in Robinson, Levi, and Davis, *The Main Source*, 1986) examined television's role in the dissemination of knowledge. The results were disappointing. Israeli studies (Katz and Adoni, 1972) reached similar conclusions.

Following a comprehensive study, Garber (*Processing the News*, 1984) concluded that the rich in knowledge became richer and the poor in knowledge became poorer. Tichenor, Donohue, and Olien (1970) proposed the "**knowledge gap hypothesis**," according to which the knowledge gap between various segments of the population, between the educated and uneducated, does not remain stable and does not narrow, but rather continually widens. This growing gap can be explained, I believe, by studies of information processing. Woodhall, Davis and Shain (1983) noted that scholars of information processing have described semantic memory as a semantic network — a complex system of nodes attached in various ways by connectives of various kinds. For example, the node "DC-10" can be tied to the node "airplane" by a connective of type and to the node "air catastrophe" by connectives of time and place. The nodes can be words, concepts, schemata, or "MOPS - Memory Organization Packets" (Schank, 1982).

The semantic network model views the comprehension process as one of interaction between new information and the semantic information existing in the network. The arrival of new information stimulates the nodes to a process of "spreading activation": an active search through the semantic network for the relevant knowledge that can facilitate comprehension of the new information. This active search makes it possible to extract all the existing information in a certain area. When one node is activated, it activates in turn all the nodes connected to it in the network.

The semantic network model features the key role of previous knowledge in absorbing new knowledge. Someone with a broad semantic network will understand more than someone with a limited semantic network, and this explains the knowledge gap. But how can we explain the growth of this gap?

An illustration may help. Suppose a reader encounters the newspaper headline "Will Arafat speak before the U.N.?" When "U.N." appears in this headline, all nodes connected to the subject are activated in an effort to absorb and understand this new information, for example, the node that "U.N." are the initials of "United Nations," the node that the U.N. is an international organization, the node of the peace-and-war-among-nations schema, the node that the U.N. building is in New York, etc.

How will an adult who knows nothing about the U.N., for whom all these nodes are inoperative, understand such a news item? He will look for the node closest to U.N. in his semantic network. In Hebrew, the initials of the U.N. are pronounced "oom," and the word for "nation" is "am." This similarity of sound may lead him to decode the headline as "Will Arafat speak before the nation?" The decoded message is not the same as the encoded one. The semantic network has not been enlarged by the new item of information; rather, a misunderstanding has been created.

The knowledge gap between the educated and the under-educated grows because a new item of information does not join the semantic network as a single node. The new node forms connectives to all other nodes in the network associated with the item. Thus the new information in the semantic network grows in direct proportion to the number of existing nodes associated with the new item.

The Research Questions and Methods

"We have no roots, that's the problem," said a Tehila [adult literacy and basic education program] student. Indeed, without roots embedded in a world of encoded previous knowledge that is stored and ready for extraction and decoding, it is difficult to absorb new knowledge. That is the problem of LFE adults. The centrality of the knowledge component in the comprehension process is now recognized in such fields as discourse analysis, communications studies, and cognition research. Exploration of the subject from these various viewpoints has given it a new dimension, which requires the development of an integrative approach.

Most of the studies conducted until now have pointed to the knowledge gap, to disappointment in television as an educator of LFE adults, and to the severity of the problem of noncomprehension of main concepts of news discourse.

In reality, I believe, there is no dichotomy between comprehension and non-comprehension. The addressees do not say that they do not understand the news discourse, but rather that they attempt to decode it.

The present study poses the question of how the addressee decodes the news when he does not know what the discourse implicitly assumes as known.

The study's questions, then, are the following:

- (1) To what degree and in which areas are the addresser's assumptions of the addressee's prior knowledge realized?
- (2) What is the addressee's response to the lack of the knowledge assumed by the addresser, and by what means does the addressee decode the text?

The research population was chosen among students in Tehila, a unique, nationwide program with eighty centers throughout Israel and some twenty thousand students (see p. 5 above). The program's formal structure of classes, a regular schedule, defined curricula, and special texts facilitated systematic research.

The Sample

For purposes of the study, we chose thirty Tehila centers in cities, villages, and development towns throughout the country.

The research sample comprised two parts:

- (a) a broad sample of some six hundred students, mostly women. In each center, we selected a class that had completed the second Tehila level, at which students are able to read the *"Sha'ar la-Matkhil"* [easy Hebrew weekly] news articles fluently. In each class, I visited a newspaper lesson based on *"Sha'ar la-Matkhil"* in which the students explained news items as they understood them. I recorded their explanations verbatim (in writing; tape recorders made the students uncomfortable). The records of the newspaper lessons were then analyzed in order to identify those instances in which a news article was based on unrealized assumptions of prior knowledge. The students' methods of dealing with their lack of the assumed knowledge were examined.

"Sha'ar la-Matkhil" was chosen as the research instrument because in all the other means of mass communication, whether radio, television, or other newspapers, there exist lexical and textual as well as pragmatic problems. The only instrument of communication that intentionally simplifies and neutralizes the lexical and textual problems is *"Sha'ar la-Matkhil."* When problems in understanding this newspaper arise, we can assume that they derive from the pragmatic area, which is the subject of the present study. The same newspaper was therefore used in examining understanding of the news in the second sample.

- (b) a sample for examining the interaction between the reader and the news discourse (sixty students). In order to examine individual students' information-processing activities, two students were chosen at random in each of the thirty classes studied. I met with each student in individual interviews averaging one-and-a-half to two hours, but with no time restriction. The interviewees, whose age was restricted to sixty and under, were regarded by their teachers as among the more advanced students in their classes.

The first part of the meeting with each student was devoted to getting acquainted and gathering information: personal data, the interviewee's sources of news, and his/her account of an interesting news item of the past week.

In the second part of the meeting, the interviewee read news articles in three areas — **politics, economics, and human interest** — from the current issue of "*Sha'ar la-Matkhil*." Each respondent read different articles. This encounter between the reader and the discourse, during which the information processing took place, was the crux of the study. Each interviewee read and reconstructed three articles; thus a total of 180 verbatim records of students' reconstructions of articles were gathered.

It was necessary to find a method of analyzing the findings that would allow us to examine both the degree of comprehension of the text and the categories by which news articles with unrealized assumptions of prior knowledge are decoded. Based on a research instrument developed by Van Dijk and Kintch (*Strategies of Discourse Comprehension*, 1983), a method that was efficient and well-suited to our needs was evolved. The texts were analyzed according to (a) propositions, (b) macro-structures, and (c) super-structures.

- (a) **Propositions:** The proposition is a unit of semantic content, the smallest unit of knowledge that can stand alone. The articles read by the addressees were broken down into propositions, which were compared with the propositions of the addressees' reconstructions. This comparison allowed us to detect what the addressees did not understand and how they explained the units of knowledge that were not clear to them. Each proposition was given a grade: two indicated comprehension; one indicated partial comprehension; and zero, noncomprehension, as in the table below.

News Discourse	Reconstructed Discourse	Grade	The Nature of the Changes
Prices rose in the economy	Prices rose	2	
(rose) in February	[I] don't know months	0	Problem of time concepts
(rose) by 1/4%	rose by 25%		Problem of number concepts

(b) **Macro-structures:** The macro-structure of a text is its essence, its central topic, its main point. In order to determine whether the chief message of the text was conveyed to the addressee, the macro-structure of the news article was compared with the macro-structure derived from the addressee's reconstruction. Accordingly, it was determined whether the information in the article was understood, partially understood, or not understood at all.

(c) **Super-structures:** Superstructures are the generic features of the news discourse. Awareness of these structures facilitates comprehension of the text; lack of familiarity with the genre may lead to comprehension problems.

Research Findings and Discussion

One of the study's assumptions was that the sample population would tend to explain the news even when unrealized assumptions of prior knowledge prevented them from understanding the texts. This hypothesis was examined by comparing the number of propositions in each of the "*Sha'ar la-Matkhil*" texts on which the research was based with the number of propositions in the corresponding texts reconstructed by the addressees. The study assumed that the propositions the addressees left out were not understood. (There could be other reasons for omitting a given proposition, in which case the percentage of propositions left out as an admission of non-comprehension would be lower.)

1) The Addressees
Explain When They
Do Not Understand

According to the research findings, the total number of propositions in the "*Sha'ar la-Matkhil*" texts was 1199. The total number of propositions omitted in the reconstructed texts was 72 — an average of only six percent of the propositions were not mentioned in the reconstruction. These findings support the hypothesis that the addressees explain when they do not understand. Ninety-four percent of the propositions were included in the reconstructions; of these, only some of them were fully understood, others were partially understood, and yet others were not understood at all.

The reconstructions of texts dealing with politics were missing an average of 5.9 percent of the original propositions; in those dealing with economics, the percentage of missing propositions rose to 9.5 percent (but considering that only 5 percent of the economics items were understood, that percentage is low). In the human interest area, only 3.2 percent of the propositions were missing; in this area most of the texts were understood.

The study examined to what extent the addressees were aware of, and willing to acknowledge, their non-comprehension of the news. A careful examination of the reconstructed accounts showed that the sample population almost never said in the course of the interviews "*I don't know about this subject*" or "*I don't understand this article.*" Of the 1199 propositions, only 12 propositions — about one percent — alluded to lack of comprehension. Of these, 6 propositions were very general in formulation: "*I don't know anything*"; "*We aren't continuing, because of that we don't know*"; "*What do we care what happens there (in the Philippines)*". Of these generally-formulated propositions, four were in the political area and two in economics.

Six of the propositions alluding to lack of comprehension mentioned a specific subject that was not known or understood: for example, *"I don't know about Zurich, it's outside the country, I was never there"*; *"The Law of Return — I don't understand"*; *"The economic plan they're planning in the Knesset [parliament] — I don't know about it"*. Of these specific propositions, two were in the political area, two in economics, and two in human interest. The specific item mentioned in the proposition was a term appearing in the article, such as a place-name or concept, and not the subject in general.

The fact that the degree of acknowledgement of non-comprehension was only one percent is significant. It is possible that educated persons would have admitted their non-comprehension more easily a — hypothesis that requires examination. It is also possible that this extremely low percentage among the population examined is due to the fact that neither the education system nor society in general encourage admission of non-comprehension.

2) The addresser who writes the news assumes that the addressee is aware of the existence of news in the mass media and is exposed to news broadcasts and articles.

The research findings indicated that the population studied are in fact extensively exposed to the news. Their main source of news is the radio, as eighty percent of the broad population sample and ninety percent of the narrow sample testified when questioned. Seventy percent of the interviewees said they watched the television evening news, adding that the broadcast was hard to understand, screened at a late hour [the program is at 9:00 P.M.], and difficult to watch while doing housework. Some said they watched "A New Evening" [daily current affairs show] and that its interview format and use of spoken language made it easier to understand than the evening news.

The interviewees' accounts of the past week's news items covered all the main current topics. But familiarity with the news does not mean understanding, and identification without comprehension can be problematic in that it is harder to pinpoint. Analysis of the interviewees' accounts revealed fragmented sentences, the tendency to begin in the middle of the story, gaps in knowledge and sentence structure, assumptions of the listener's familiarity with the subject and ability to fill in what was missing, assumptions of a common context between speaker and listener, omissions, generalizations,

and the tendency to slip into the area of personal experience. These are all features of the oral language familiar to the population studied; in order to understand their accounts, it was necessary to "translate" them into the language of writing.

The table below shows, in percentages of information understood, the interviewees' degree of comprehension of the news articles' macro-structures.

	Politics	Economics	Human Interest
Comprehension	23.3	5.07	75.0
Partial Comprehension	36.7	31.7	15.0
Noncomprehension	40.0	63.3	10.0

3) The addresser, the news writer or editor, assumes the addressees' familiarity with the macro-structure of the news discourse and their capacity to absorb the global message of the text.

Given that the texts were taken from an easy Hebrew newspaper which neutralizes lexical and textual problems, these findings are astonishing. The lack of world-knowledge, then, is a central factor in noncomprehension.

Full comprehension occurs when the addresser's assumptions regarding the addressee's prior knowledge are realized.

In cases of **partial comprehension**, the addressees generally do not acknowledge their inability to understand the text, but rather attempt to interpret it. The news item is altered and receives a different meaning in a new context, which is created by: (a) omission of certain portions of the item and derivation of a new macro-structure from those that remain; (b) additions which change the item's significance; and (c) diversion of the item into a direction that is familiar and understood. Partial comprehension is often no less problematic than noncomprehension.

Noncomprehension occurs when the macro-propositions are not clear, when there is no redundancy, and when the assumed prior knowledge is so extensive that the addressee cannot derive meaning of any kind. The addressee is usually unaware of his lack of knowl-

- 4) The news writer (addresser) assumes that the addressees have the world-knowledge implicit in the *micro-structures* of the news discourse (the propositions) and that they are able to understand the news details presented by the text.

edge and attempts to decode the text, resulting in alteration of meaning, reversal of meaning, or absence of meaning.

Our findings indicate that only one third of the propositions in the area of politics, one fourth of the propositions in economics, and three quarters of the propositions in the human interest area are understood.

The present study's objectives went beyond demonstrating the extent of news noncomprehension and included also determination of whether noncomprehension occurred according to some pattern. The findings indicate that erroneous interpretations can be classified according to categories which can help us understand and treat noncomprehension.

Some categories of noncomprehension derive from the process of transition to the world of writing. These categories are learned over the course of years in formal education, and those who have not learned them will find it difficult to understand written discourse. These categories of non-comprehension derive from:

-
1. lack of paralinguistic knowledge (punctuation)
 2. inadequate semantic distinction
 3. partial or erroneous definitions
 4. unfamiliarity with foreign words
 5. difficulties with time, space, and number concepts
 6. erroneous or missing schemata
-

The transition to the world of writing is thus long and complex and must be consciously activated for LFE adults. The categories revealed by the present study can help facilitate this process.

Other categories of noncomprehension revealed through analysis of the erroneous propositions have their source in the world of spoken language and are borrowed by the addressees in an attempt to explain the written text. This borrowing is often inappropriate and results in distorting the meaning of the text. In other words, the decoding differs from the encoding.

These categories are as follows:

-
7. words with similar sounds but different meanings
 8. reliance on stereotypical sayings and slogans; dictation of meaning
 9. meaningless generalization
 10. transposition to personal experience; restriction of meaning
 11. culturally influenced interpretation
-

One assumption of oral discourse is the existence of a shared context; another is that things can be clarified in the course of the conversation.

I will first describe each of these categories and illustrate the way they are encoded through examples from the research findings. Then the frequency with which each category occurs for each addressee will be examined, as will the frequency of each category in each of the news areas studied (politics, economics, and human interest).

The following examples will illustrate the various categories of noncomprehension:

Lack of paralinguistic knowledge:

In the headline "Will Pollard Return Alive?" the rhetorical question mark is perceived as indicating a substantive question whose answer is sought in the article.

Inadequate semantic distinction:

"The program of economic growth" is interpreted as *"the economy is growing; there are fruits and vegetables."* The error lies in confusing the various meanings of "growth," and the item is interpreted according to the most familiar meaning.

Erroneous definition:

"Minister without portfolio" is interpreted as *"an uneducated minister without a diploma."*

Unfamiliarity with foreign words:

"Opposition" [*oppozitsia* in Hebrew] is understood as *"the name of a party."*

Difficulties with time, space, and number concepts:

Time concepts:

Reading "World War II, 1939-1945," the addressee asks, *"What, there was another war in 1945?"*

Space concepts:

Asked where the United States is located on the map, the addressee answers *"far away"* and points to Africa.

Number concepts:

"56 leaders arrived" is interpreted as *"5, 6 leaders";* *"a cost-of-living increase of 2.2%"* is understood as *"an increase of 22%."*

LFE adults have lived for many years within the world of everyday concepts. The transition to "academic" and "scientific" concepts is not simple. Cognitive studies in the conceptual area (studies of archetype, family resemblance, basic level, and cognitive schemata) may help.

Erroneous or missing schemata:

A news item about a proposed international conference for the Middle East assumes knowledge of the schemata of international relations. Lacking these schemata, the addressee attends to the part of the article discussing relations between Israeli Prime Minister Shamir and opposition leader Peres and interprets it according to the schema of personal relations: *"It's not nice for Shamir to curse Peres and say he won't succeed."*

Words with similar sounds but different meanings:

In response to a student's request, a teacher spelled out the meaning of the word "hormones." After listening to the explanation, the student asked, *"So why are the religious people against them building in Jerusalem?"* Her query was actually about the word "Mormons."

Reliance on stereotypical sayings and slogans:

Talking about journalists, an addressee says, "*Snooping brings catastrophe*" or "*Curiosity killed the cat.*"

Meaningless generalization:

Speaking of the tension between the Labor and Likud [Israeli political parties], a student says, "*This one wants this way and that one wants that way, they want to see about that thing of theirs.*" Who are "this one" and "that one", and what are "this way" and "that way" is not clear.

Transposition to personal experience, restriction of meaning:

Instead of discussing health services, an addressee tells a story of his visit to the clinic.

Culturally influenced interpretation:

News in the mass media is usually presented as objective fact, without the writer's opinion or interpretation. The interviewees generally presented their reconstructions of the news in the same objective manner, but often added to what was written in the news discourse. Analysis of these additional propositions frequently showed an interpretation of the news different from the one intended, with the discrepancy rooted in the addresser's and addressee's differing cultural backgrounds. For example, events were often attributed to luck, miracle, or divine decree. Discussing Pollard, it was said, "*That was his luck. How the wheel of fate turns!*" Other interpretations evidenced fear of supernatural forces such as unidentified flying objects or witches.

These, then, are the categories; it may be possible to identify others. What is important is to recognize that noncomprehension and alteration of meaning operate according to a system which can help us diagnose and advance the comprehension of LFE adults.

After identifying, defining, and illustrating the categories, the study examined the frequency with which they were used by the addressees in the various areas of news (politics, economics, and human interest).

**Frequency of the
Addressees' Use
of the Categories
in Various Areas
of the News**

Categories of the Addressees' Explanations, by News Area

News Area	Number of Categories	$\bar{X}$	SD
politics	282	4.7	1.8
economics	270	4.5	1.6
human interest	90	1.5	1.1

The average respondent used close to five different categories in the areas of politics and economics, and an average of only one or two categories in the human interest area.

In the areas of politics and economics, the results are more homogeneous, with a greater number falling close to the average. The human interest area is less uniform. The reason for this difference may be that, in politics and economics, the addressees lack knowledge about most of the items in the text, while in the human interest area, the unknown occurs at random.

Examination of the correlation between the areas revealed the following: between politics and economics, $r = .16$; between politics and human interest, $r = .08$; and between economics and human interest $r = .09$ — that is, a correlation of close to zero.

This low correlation may indicate that the prior knowledge of each addressee in each of the areas derives from his or her personal experience, making this knowledge difficult to predict. It may be assumed that the greater the students' formal schooling, the better the chances of predicting the knowledge at their disposal. In the case of those who have not had regular formal schooling, it will be more difficult to predict their knowledge.

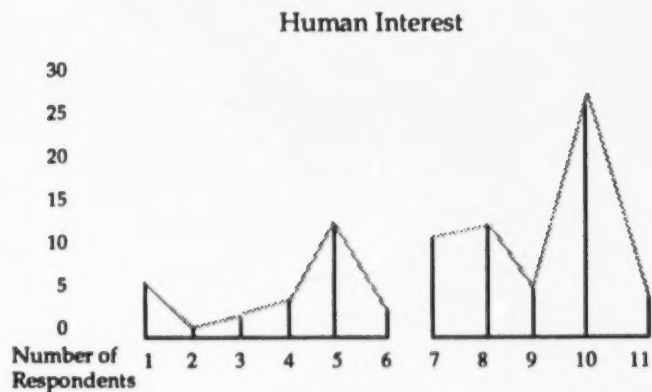
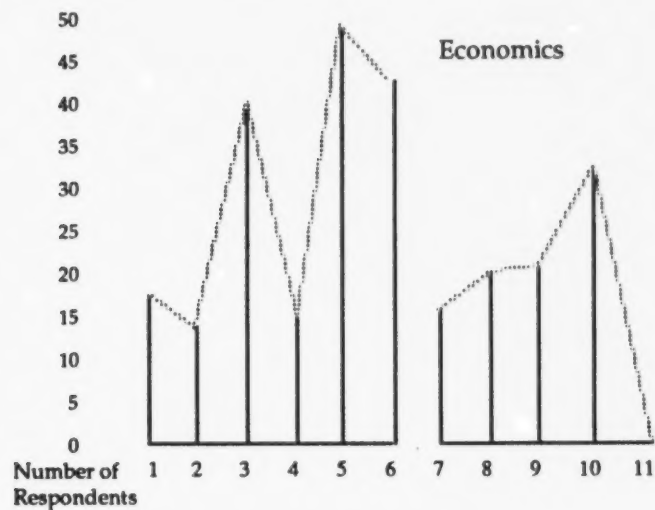
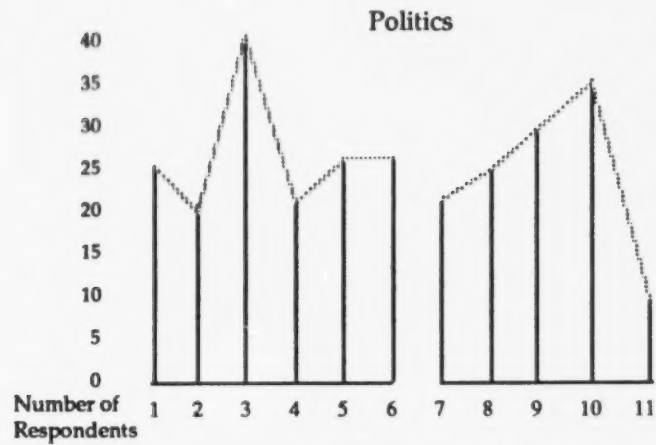
The frequency of each category in each of the news areas was also examined (see the table and graphic representation below). The chief finding here is that the addressees use each of the categories in each of the news areas, with the exception of culturally influenced interpretation, which does not appear in the area of economics. The nature of the economics genre does not allow for the use of this category. Due to the objective character of news writing, this category appears infrequently in politics and human interest as well.

Frequency of the Categories of Explanation Used in Cases
of Unrealized Assumptions of Prior Knowledge, by News Area

Category	1	2	3	4	5	6	7	8	9	10	11	Total Area
Politics	29	19	39	20	29	29	20	25	27	37	8	282
Economics	22	13	42	14	45	42	14	22	23	33	0	270
Human Interest	8	1	3	4	16	2	9	12	5	24	6	90
Total	59	33	84	38	90	73	43	59	55	94	14	642

Note: Numbers at top of table refer to the categories of explanation detailed above. Numbers 1-6 refer to categories from the world of writing; 7-11 to categories from the world of speech.

Frequency of Categories by News Area



Note: Numbers below each graph refer to the categories of explanation detailed above. Numbers 1-6 refer to categories from the world of writing; 7-11 to categories from the world of speech.

In the area of politics, the addressees had problems stemming from lack of paralinguistic knowledge, inadequate semantic distinction, and unfamiliarity with foreign words, but the chief difficulty lay in the area of partial or erroneous definitions. Political news writing is replete with general political terms and those generated by current issues, such as "international conference," "mediation," etc. Such terms require precise definition, which is difficult for the population studied. Problems with general concepts of time, space, and number as well as with cognitive schemata also characterize the political area. The addressees' chief strategy for dealing with their lack of information in these areas was reliance on their own personal experience and prior knowledge, making the "transposition to personal experience" category very high in the political area (see graph above). Such other strategies as "meaningless generalization" and "similar sounds but different meanings" were also widely used.

The economics area graph is similar to that of the political area, showing a pronounced problem with definitions, but the chief problem was in specialized economics terminology ("index," "inflation," etc.) and economics schemata (the relation between wages and index, etc.). Here, too, the addressees employed various strategies, especially reliance on prior knowledge and personal experience (see graph).

Fewer problems arose in the human interest area, as the graph indicates. Definitions posed few difficulties. Problems occurred with the appearance of an unknown term or concept, and here, once again, the chief strategy was to draw on personal experience.

These findings support the research hypothesis regarding the vital importance of the pragmatic area in reading comprehension. New information seeks roots in prior information during the comprehension process.

Although lack of familiarity with the genre is not the decisive factor in failure to comprehend a news item, this lack can play an important contributory role. For an addressee who has difficulty understanding the macro- or micro-structure of the discourse, the addition of generic noncomprehension can be "the straw that breaks the camel's back."

Among these generic features of the news is the "inverse pyramid" principle, according to which the new appears first. The struc-

5) The addresser assumes the addressee's knowledge of the super-structures of the news discourse, the features particular to the genre.

ture in which information is arranged according to its news value and not necessarily in chronological order impedes comprehension.

Another feature of the genre is the use of headlines. The headlines' density of information and special syntax make comprehension difficult.

Certain generic features are specific to the various news areas: in political news, for example, incorporation in the article of everything known to the addresser on the topic in question, producing a structure that is difficult to understand.

There seems to be an unwritten agreement that economics articles be written in a manner that is difficult to understand. Because of this generic schema, only five percent of the economics material presented to the interviewees was understood. The far simpler generic features of the human interest texts made them much better understood.

"Bad News" or Negativity

A pervasive feature of the news super-structure is its negativity. In order to be reported, an event must be both new and exceptional. The preference for the negative lies in its compatibility with the other features of the genre: the negative news item is quick, simple, easily identified, surprising, unequivocal, scandalous, and based on conflict.

The population studied had a problem with "bad news": *"For once we should hear good news, heaven forbid. We only hear bad things. I could break the television"; or "The news is something horrible. When I'm nervous I turn off the radio, I can't [listen]."*

What lies behind the addressees' use of terms like "horrible, infuriating, shocking" in describing the news? They raised two contentions:

- (a) *"The whole world has to know what's happening and that gives us a bad name. It dirties us."* Just as what "dirties" the family is not to be broadcast outside it, the negative in our collective life should not be discussed in public, for others can exploit the information.

- (b) Remarks such as *"Everything is talked about too much; talking brings us trouble"* indicate a fear of the power of the word. Ong (1977) discussed the belief of oral cultures in the word's capacity to exert magical power. It is because of such a belief in the magical power of the word that the population studied had a problem with the negativity of the news. They were very angry at negative news items and especially at those predicting such anxiety-producing events as war.

Explaining the nature of the news genre could possibly help the addressees, but this would not solve the problem of their belief in the power of the word. The need to deal with this problem was spotlighted during Israel's 1988 national elections, when certain parties exploited the belief in blessings and curses to influence voters. This issue, strikingly reflected in our research findings, is not to be ignored.

The Study's Contributions

The distinctiveness of the present study lies in its posing a question not usually asked: how is the news misunderstood? Or, how is the news discourse processed when all or part of it is not understood?

Our findings clearly indicate that when the addresser's assumptions of the addressee's prior knowledge are not realized, the encoding and decoding processes may be asymmetrical. The findings verify the hypothesis that human interest news and political or economic news are understood to different degrees. The most important findings were that

- 1) when the addressees do not understand, they interpret; and
- 2) the decoding process in instances of noncomprehension occurs according to a system, on the levels of both macro and micro.

To Reading Comprehension Theory

The study's contribution to reading comprehension theory lies in its **highlighting of the pragmatic area in the comprehension process.** Study of this pragmatic element is in its infancy. Research findings in certain areas of cognitive science have underscored the role of the addressee's existing knowledge in absorbing the new knowledge presented in a discourse. In addition to absorbing new knowledge, existing knowledge facilitates the processes of retaining new information and extracting it when needed. Noncomprehension due to deficiency in the pragmatic area means a widening of the gap between the educated and those with limited formal education.

Another contribution of the study is its **development of a method for examining the pragmatic element in comprehension** by identifying, listing, and comparing the propositions and macro-structures of the news discourse and the addressee's reconstruction of it and examining the super-structures of the news discourse. The value of this system is in its applicability to various populations, means of communication, and texts, thus allowing comparative study. The present study represents a pioneering effort in this area.

There is a need for further study of how information is processed in the face of unrealized assumptions of prior knowledge: e.g. among populations of various educational levels, utilizing additional research instruments, further studies using the present study's methods, research examining the present study's findings through additional research methods, and applied research.

The study's contributions in this area are in **bringing the role of world-knowledge in reading comprehension to the fore** and the development of tools for identifying the decoding processes in instances of noncomprehension due to the absence of world-knowledge.

**To Teachers of
LFE Adults**

This study has clarified an additional point: there is reason to fear that the lack of assumed prior knowledge can result in more than a "local" misunderstanding of a detail of discourse — for decoding without understanding can lead to the construction of an "erroneous world."

According to studies of semantic memory, material must be processed, given meaning, organized, and connected to prior knowledge in order to enter the memory. In other words, integrative processes relating new knowledge to existing knowledge are needed. Extensive existing knowledge thus fosters the broad, accurate absorption of new knowledge, and this is the source of the large gap between educated persons with a large fund of existing knowledge and LFE adults who lack it. **Closing this gap requires, first and foremost, the systematic and structured building of the LFE adult's world of knowledge.**

To foster the progress of the LFE adult along the continuum from illiteracy to literacy, we must provide not only reading and writing skills, but also systematic and structured world-knowledge. This teaching of world-knowledge cannot be accomplished through the short-term reading projects prevalent in many of the countries fighting illiteracy. **The present study's findings show that reading is**

part of a larger transition process from the world of the spoken word to that of the written word — a lengthy and difficult process that should be facilitated in a conscious, systematic, and structured manner. Short-term courses cannot accomplish this transition between two worlds.

Under these circumstances, teaching reading according to the "each one teach one" method is not effective. Rather, long-term and serious training of teachers who devote themselves to the mastery of literacy teaching is needed. As this study has shown, amateur teaching can lead to the creation of an "erroneous world." Reading must be taught in a planned, structured, learning framework. The Tehila program was designed as such a framework.

The present study was conducted within the Tehila program, and its findings are of proven importance first and foremost for the population studied. Since the subject of the study was processes of non-comprehension, there was insufficient emphasis on Tehila's achievements in teaching LFE adults, some of whom began with no literacy whatever and reached the stage of newspaper-reading and beyond (in the Tehila secondary program).

It can be assumed that the research findings are relevant for all of Israel's LFE adults, as well as the LFE adults in other countries — especially the one billion illiterates still with us at the end of the twentieth century.

The present study can help those seeking to advance LFE adults by clarifying the processes the research population employed to decode written discourse. **The findings show that prior knowledge is not to be assumed; one must check whether it exists.** It is vital to examine whether the macro-structure is clear, or whether the addressee is constructing erroneous texts from parts of the existing one, or adding to or distorting the text.

One must determine whether the addressees are able to **distinguish between the trivial and the essential in a given text.** This ability is important, according to the rules of macro-structure: omission — of unimportant details; generalization — combining details into new units; and reconstruction — perceiving the wholeness of the central idea conveyed in the text.

LFE adults have a problem in this area. They find it extremely difficult to produce the essence of a text, either orally or in writing. When they are asked to relate their biography, describe an event, or summarize a written text, they report a sequence of happenings, and it is difficult for them to change the order of this sequence. They do not wish to omit secondary details. In their daily lives, they do not have to build macro-structures of discourse. The important and the unimportant are determined by special criteria. The description of a bride's dress can in certain cases be as important as a report of the wedding itself. The ability to summarize and distill the essence are products of the world of writing, and are developed over a period of years. To facilitate the transition from the world of speech to the world of writing, this ability must be systematically developed.

From the beginning, **reading should be taught according to the "top-down" along with the "bottom-up" model.** Active "top-down" reading means using not only specific reading skills, but also knowledge and schemata that allow the reader to anticipate what will come next in the text. It is thus necessary, along with teaching reading skills, to bring relevant existing knowledge to the surface and build a system of knowledge that will allow the absorption of additional information.

It is important to provide a basis of world-knowledge and familiarity with the characteristics of the world of writing. World-knowledge must be taught in a **structured manner**, so that new information can be integrated into the semantic network, creating nodes that will become anchors for additional information.

Each subject of world-knowledge should be taught according to its own **internal structure**. If geography is needed to understand the news, then geography should be taught systematically and not haphazardly. The map is important for understanding the news, but it should not be taught by means of the news but rather as a separate subject, as a basis for understanding the news. Map-study, part of the internal structure of the subject of geography, should be conducted in a systematic, long-term manner, making sure that each student has in fact learned to use a map. In general, teaching fewer subjects thoroughly is preferable to covering more subjects superficially.

Students' errors should not be regarded as merely random or accidental. Mistaken association of different words with similar sounds, meaningless generalizations, and inappropriate passage into

the realm of personal experience are phenomena that are not to be glossed over. The learners must be taught all the various aspects of the world of writing:

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- 1) What is not known can be sought in dictionaries, encyclopedias, and other books. Ong (1982) speaks of a group in which the concept of "looking it up" does not exist.
 - 2) Paralinguistics: this information is not acquired automatically.
 - 3) Distinction between the important and unimportant.
 - 4) Attention to "semantic components." The same word has different connotations.
 - 5) Identification of context: words have different meanings in different contexts.
 - 6) Inculcation of concepts, according to methods based on current research.
 - 7) Construction of schemata: Much recent study of schemata has yet to reach a large number of teachers. Schemata should be built in a deliberate, directed manner.
 - 8) Familiarity with the genre.
-

It is vital to assure students that it is permissible not to know, and that in such instances it is desirable to ask.

To Heightening News Writers' Awareness of the Possible Asymmetry Between Encoding and Decoding

The research findings indicate that the students are extensively exposed to the media and that exposure does not guarantee understanding. Television news editors should not rely solely on surveys indicating numbers of viewers, but should examine the extent of news comprehension.

The entire mass media genre should be re-examined and the possibility of presenting news in other genres explored.

The mass media could become a tool for conveying the knowledge needed to understand the news, through programs especially designed for that purpose.

In a report for the B.B.C., Prof. Elihu Katz (1977) wrote of the "missing link" in the chain connecting the news-producers and the addressees. The present study was designed to contribute toward the forging of that link.

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